	Application No.	Applicant(s)
Notice of Allowability	10/765,717	QADEER ET AL.
	Examiner	**Art Unit**	
	Anna Deng	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *9/20/2007*.

2. ☒ The allowed claim(s) is/are *1,2,4-18 and 20*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR

1.17(e), was filed in this application after final rejection. Since this application is eligible for continued

examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the

finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's

submission filed on 9/20/2007 has been entered.

2.   The rejection under 35 U.S.C. 102 (b) as being anticipated by Charistiaens, US 2002/0120428 A1

to claims 1-20 is withdrawn in view of applicant's amendment.

3.   Claims 1-2, 4-5, 8-15, 17-18, and 20 have been amended.

4.   Claims 3 and 19 have been canceled.

5.   Claim 20 has amended to correct the status of the claim (see Examiner's amendment below).

6.   Claims 1-2, 4-18, and 20 are pending.

7.   Claims 1-2, 4-18, and 20 are allowed.

EXAMINER'S AMENDMENT

8.   An examiner's amendment to the record appears below. Should the changes and/or additions be

unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure

consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

        Authorization for this examiner's amendment was given in a telephone interview with Stephen A.

Wight (Reg. No. 37,759) on 10/11/2007 to correct the status of claim 20.

        The application has been amended as follows:

Claim 20:

        In line 1, change "(Previously presented)" to –(Currently Amended)--.

--END--

REASONS FOR ALLOWANCE

8.   The following is an examiner's statement of reasons for allowance:

The cited prior art taken alone or in combination fail to teach, in combination with other claimed

limitations, the program sequentializer module is further configured to add data structures to the received

code, the added data structures at least comprising: a multiset of thread pointers which comprises

pointers to threads which have been created but have not yet been scheduled on the runtime stack; and a

global Boolean exception variable which, when set, causes the single-threaded sequential program to

remove from the runtime stack the currently-executing thread as recited in independent Claim 1; creating

a single-threaded sequential program comprises adding instrumentation and variables to the concurrent

program which cause the function of the concurrent program to be executed sequentially; and the added

variables include: a multiset of thread pointers which comprises pointers to threads which have been

started but have not yet been scheduled on the runtime stack; and a global Boolean exception variable

which, when set, causes the single-threaded sequential program to remove from the runtime stack the

currently scheduled thread as recited in independent Claims 13 and 18.

The closest cited prior art, Charistiaens, (US 2002/0120428 A1), teaches a system for detecting a

data race in a multithreaded concurrent program. However, Charistiaens fails to teach the program

sequentializer module is further configured to add data structures to the received code, the added data

structures at least comprising: a multiset of thread pointers which comprises pointers to threads which

have been created but have not yet been scheduled on the runtime stack; and a global Boolean

exception variable which, when set, causes the single-threaded sequential program to remove from the

runtime stack the currently-executing thread as recited in independent Claim 1; creating a single-threaded

sequential program comprises adding instrumentation and variables to the concurrent program which

cause the function of the concurrent program to be executed sequentially; and the added variables

include: a multiset of thread pointers which comprises pointers to threads which have been started but

have not yet been scheduled on the runtime stack; and a global Boolean exception variable which, when

set, causes the single-threaded sequential program to remove from the runtime stack the currently scheduled thread as recited in independent Claims 13 and 18.

These claimed limitations are not present in the prior art of record and would not have been obvious, thus all pending claims 1-2, 4-18, and 20 are allowed.
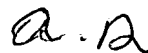
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Deng whose telephone number is 571-272-5989. The examiner can normally be reached on Mondays to Fridays 9:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anna Deng
October 11, 2007

WEI ZHEN
SUPERVISORY PATENT EXAMINER